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Date of Signature and Deposit: June 10, 2004


Sara D. Vinarov

PATENT



THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Michael M. Cox
Shelley L. Lusetti
Aimee L. Egger
Nami Haruta

Date: June 10, 2004

Serial No.: 10/733,782

Group Art Unit: 1632

Filed: 12/11/2003

Examiner:

Title: RecA MUTANTS

File No.: 960296.99501

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P O Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed is a completed Form PTO-1449 listing documents that the applicants in the above-identified application wish to bring to the attention of the Examiner for consideration in connection with the examination on the merits of this application.

No fee is believed due in connection with this submission. However, if a fee is due, please charge the fee to Deposit Account No. 17-0055.

Respectfully submitted,



Sara D. Vinarov
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Attorney for Applicants
QUARLES & BRADY LLP
P.O. Box 2113
Madison, WI 53701

TEL 608/251-5000
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Express Mail No.

PTO/SB/17 (10-03)

Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 0.00

Complete if Known

| | |
|----------------------|----------------|
| Application Number | 10/733,782 |
| Filing Date | 12/11/2003 |
| First Named Inventor | Michael M. Cox |
| Examiner Name | |
| Art Unit | 1632 |
| Attorney Docket No. | 960296.99501 |

METHOD OF PAYMENT (check all that apply)☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☒ Deposit Account:Deposit Account Number: 17-0055
Deposit Account Name: Quarles & Brady LLP

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments☒ Charge any additional fee(s) or any underpayment of fee(s)☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.**FEE CALCULATION****1. BASIC FILING FEE**

| Large Entity | | Small Entity | | Fee Description | Fee Paid |
|--------------|----------|--------------|----------|------------------------|------------|
| Fee Code | Fee (\$) | Fee Code | Fee (\$) | | |
| 1001 | 770 | 2001 | 385 | Utility filing fee | |
| 1002 | 340 | 2002 | 170 | Design filing fee | |
| 1003 | 530 | 2003 | 265 | Plant filing fee | |
| 1004 | 770 | 2004 | 385 | Reissue filing fee | |
| 1005 | 160 | 2005 | 80 | Provisional filing fee | |
| SUBTOTAL (1) | | | | | (\$) 0.00 |

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

| | Extra Claims | Fee from below | Fee Paid |
|--------------------|--------------|----------------|----------|
| Total Claims | -20** = | X | 0.00 |
| Independent Claims | -3*** = | X | 0.00 |
| Multiple Dependent | | | |

| Large Entity | | Small Entity | | Fee Description |
|-------------------------|----------|--------------|----------|--|
| Fee Code | Fee (\$) | Fee Code | Fee (\$) | |
| 1202 | 18 | 2202 | 9 | Claims in excess of 20 |
| 1201 | 86 | 2201 | 43 | Independent claims in excess of 3 |
| 1203 | 290 | 2203 | 145 | Multiple dependent claim, if not paid |
| 1204 | 86 | 2204 | 43 | ** Reissue independent claims over original patent |
| 1205 | 18 | 2205 | 9 | ** Reissue claims in excess of 20 and over original patent |
| SUBTOTAL (2) (\$) 0.00 | | | | |

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)**3. ADDITIONAL FEES**

| Large Entity | | Small Entity | | Fee Description | Fee Paid |
|--------------|----------|--------------|----------|--|----------|
| Fee Code | Fee (\$) | Fee Code | Fee (\$) | | |
| 1051 | 130 | 2051 | 65 | Surcharge - late filing fee or oath | |
| 1052 | 50 | 2052 | 25 | Surcharge - late provisional filing fee or cover sheet | |
| 1053 | 130 | 1053 | 130 | Non-English specification | |
| 1812 | 2,520 | 1812 | 2,520 | For filing a request for <i>ex parte</i> reexamination | |
| 1804 | 920* | 1804 | 920* | Requesting publication of SIR prior to Examiner action | |
| 1805 | 1,840* | 1805 | 1,840* | Requesting publication of SIR after Examiner action | |
| 1251 | 110 | 2251 | 55 | Extension for reply within first month | |
| 1252 | 420 | 2252 | 210 | Extension for reply within second month | |
| 1253 | 950 | 2253 | 475 | Extension for reply within third month | |
| 1254 | 1,480 | 2254 | 740 | Extension for reply within fourth month | |
| 1255 | 2,010 | 2255 | 1,005 | Extension for reply within fifth month | |
| 1401 | 330 | 2401 | 165 | Notice of Appeal | |
| 1402 | 330 | 2402 | 165 | Filing a brief in support of an appeal | |
| 1403 | 290 | 2403 | 145 | Request for oral hearing | |
| 1451 | 1,510 | 1451 | 1,510 | Petition to institute a public use proceeding | |
| 1452 | 110 | 2452 | 55 | Petition to revive - unavoidable | |
| 1453 | 1,330 | 2453 | 665 | Petition to revive - unintentional | |
| 1501 | 1,330 | 2501 | 665 | Utility issue fee (or reissue) | |
| 1502 | 480 | 2502 | 240 | Design issue fee | |
| 1503 | 640 | 2503 | 320 | Plant issue fee | |
| 1460 | 130 | 1460 | 130 | Petitions to the Commissioner | |
| 1807 | 50 | 1807 | 50 | Processing fee under 37 CFR 1.17(q) | |
| 1806 | 180 | 1806 | 180 | Submission of Information Disclosure Stmt | |
| 8021 | 40 | 8021 | 40 | Recording each patent assignment per property (times number of properties) | |
| 1809 | 770 | 2809 | 385 | Filing a submission after final rejection (37 CFR 1.129(a)) | |
| 1810 | 770 | 2810 | 385 | For each additional invention to be examined (37 CFR 1.129(b)) | |
| 1801 | 770 | 2801 | 385 | Request for Continued Examination (RCE) | |
| 1802 | 900 | 1802 | 900 | Request for expedited examination of a design application | |

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$) 0.00

SUBMITTED BY

Name (Print/Type) Sara D. Vinarov

Registration No. 48,524

(Complete if applicable)

Telephone 608/251-5000

Signature

Date June 10, 2004

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.

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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known

| | |
|------------------------|----------------|
| Application Number | 10/733,782 |
| Filing Date | 12/11/2003 |
| First Named Inventor | Michael M. Cox |
| Art Unit | 1632 |
| Examiner Name | |
| Attorney Docket Number | 960296.99501 |

Sheet

1

of

2

OTHER PRIOR ART—NON PATENT LITERATURE DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
|--------------------|-----------------------|---|----------------|
| | | Ennis, D.G., et al., "Analysis of recA mutants with altered SOS functions," (1995) Mutat. Res. 336:39-48 | |
| | | Knight, K.L., et al., "Identification of the Amino Acid Substitutions in Two Mutant Forms of the recA Protein from Escherichia coli: recA441 and recA629*," (1984) J. Biol. Chem. 259:11279-11283 | |
| | | Lavery, P.E., et al., "Biochemical Basis of the Constitutive Repressor Cleavage Activity of recA730 Protein," (1992) J. of Biol. Chem. 267:20648-20658 | |
| | | Lusetti, S.L., et al., "C-terminal Deletions of the Escherichia coli RecA Protein," (2003) J. Biol. Chem. 278:16372-16380 | |
| | | Lusetti, S.L., et al., "Magnesium Ion-dependent Activation of the RecA Protein Involves the C Terminus," (2003) J. Biol. Chem. 278:16381-16388 | |
| | | Madiraju, M.V., et al., "Properties of a Mutant recA-Encoded Protein Reveal a Possible Role for Escherichia coli recF-Encoded Protein in Genetic Recombination," (1988) Proc. Natl. Acad. Sci. U.S.A. 85:6592-6596 | |
| | | Madiraju, M.V., et al., "Enzymatic Properties of the RecA803 Protein, a Partial Suppressor of recF Mutations," (1992) Biochemistry 31:10529-10535 | |
| | | Shan, Q., et al., "DNA Strand Exchange Promoted by RecA K72R," (1996) J. Biol. Chem. 271:5712-5724 | |
| | | Tateishi, S., et al., "C-terminal Truncated Escherichia coli RecA Protein RecA5327 Has Enhanced Binding Affinities to Single- and Double-stranded DNAs," (1992) J. Mol. Biol. 223:115-129 | |
| | | Thomas, A., et al., "Control of recA dependent activities in Escherichia coli: a possible role for the recF product," (1983) J. Gen. Microbiol. 129:681-686 | |

Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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|---|---|--------------------------|----------------|------------------------|--------------|
| INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary) | | Complete if Known | | | |
| | | Application Number | 10/733,782 | | |
| | | Filing Date | 12/11/2003 | | |
| | | First Named Inventor | Michael M. Cox | | |
| | | Art Unit | 1632 | | |
| | | Examiner Name | | | |
| Sheet | 2 | of | 2 | Attorney Docket Number | 960296.99501 |

| OTHER PRIOR ART—NON PATENT LITERATURE DOCUMENTS | | | |
|---|-----------------------|---|----------------|
| Examiner Initials* | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
| | | Volkert, M.R., et al., "Two-Component Suppression of recF143 by recA441 in Escherichia coli K-12," (1984) J. Bact. 160:702-705 | |
| | | Wang, T.C., et al., "recA (Srf) Suppression of recF Deficiency in the Postreplication Repair of UV-Irradiated Escherichia coli K-12," (1986) J. Bact. 168:940-946 | |
| | | Wang, T.C., et al., "Cloning and preliminary characterization of srf-2020 and srf-801, the recF partial suppressor mutations which map in recA of Escherichia coli K-12," (1991) Biochimie 73:335-340 | |
| | | Wang, T.C., et al., "Cosuppression of recF, recR and recO mutations by mutant recA alleles in Escherichia coli cells," (1993) Mutat. Res. 294:157-166 | |
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| Examiner Signature | | Date Considered | |
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1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.
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